

● PRINTER RUSH ●
(PTO ASSISTANCE)

Application : 09/721,479 Examiner : S. CHEN GAU : 1648

From: R. MITCHELL Location: IDC FMF FDC Date: 10/20/05

Tracking #: EPM 09/721,479 Week Date: 5/9/05

DOC CODE	DOC DATE	MISCELLANEOUS
<input type="checkbox"/> 1449		<input type="checkbox"/> Continuing Data
<input type="checkbox"/> IDS		<input type="checkbox"/> Foreign Priority
<input type="checkbox"/> CLM		<input type="checkbox"/> Document Legibility
<input type="checkbox"/> IIFW		<input type="checkbox"/> Fees
<input type="checkbox"/> SRFW		<input type="checkbox"/> Other
<input checked="" type="checkbox"/> DRW	<u>4/21/04</u>	
<input type="checkbox"/> OATH		
<input type="checkbox"/> 312		
<input type="checkbox"/> SPEC		

[RUSH] MESSAGE: ATTENTION CHIEF DRAFTSPERSON

FIGS. 11C, 11F, 11G, 14D, 14E, 14G, 14H, 17C, 18B, 18E, 21I, 22E
HAS DATE STAMP OVER DATA.

THANK YOU
REM

[XRUSH] RESPONSE: - SEE ATTACHMENTS

- DRAWINGS CORRECTED

INITIALS: SZ

NOTE: This form will be included as part of the official USPTO record, with the Response document coded as XRUSH.
REV 10/04

662 TGCAATACGTGTGTCACCCAGACAGTCGATTTCAGCCTTGACCCTACCTTCACCATTGAG
ACGTTATGCACACAGTGGGTCTGTGAGCTAAAGTCGGAAGTGGGATGGAAGTGGTAACTC

722 ThrIleThrLeuProGlnAspAlaValSerArgThrGlnArgArgGlyArgThrGlyArg
ACAATCACGCTCCCCAAGATGCTGTCTCCCGCACTCAACGTCGGGGCAGGACTGGCAGG
TGTTAGTGGGAGGGGGTTCTACGACAGAGGGCGTGAGTTGCAGCCCCGTCTGACCGTCC

782 GlyLysProGlyIleTyrArgPheValAlaProGlyGluArgProSerGlyMetPheAsp
GGGAAGCCAGGCATCTACAGATTTGTGGCACCGGGGGAGCGCCCCTCCGGCATGTTTCGAC
CCCTTCGGTCCGTAGATGTCTAAACACCGTGGCCCCCTCGCGGGAGGCCGTACAAGCTG

822 BGLI, 839 DRD1,

842 SerSerValLeuCysGluCysTyrAspAlaGlyCysAlaTrpTyrGluLeuThrProAla
TCGTCCGTCCTCTGTGAGTGCTATGACGCAGGCTGTGCTTGGTATGAGCTCAGCCCCGCC
AGCAGGCAGGAGACACTCACGATACTGCGTCCGACACGAACCATACTCGAGTGCGGGGCGG

887 SACI,

902 GluThrThrValArgLeuArgAlaTyrMetAsnThrProGlyLeuProValCysGlnAsp
GAGACTACAGTTAGGCTACGAGCGTACATGAACACCCCGGGGCTTCCCGTGTGCCAGGAC
CTCTGATGTCAATCCGATGCTCGCATGTACTTGTGGGGCCCCGAAGGGCACACGGTCTCG

937 SMAI XMAI,

962 HisLeuGluPheTrpGluGlyValPheThrGlyLeuThrHisIleAspAlaHisPheLeu
CATCTTGAATTTTGGGAGGGCGTCTTTACAGGCCTCACTCATATAGATGCCCACTTTCTA
GTAGAACTTAAACCCTCCCGCAGAAATGTCCGGAGTGAGTATATCTACGGGTGAAAGAT

991 STUI,

1022 SerGlnThrLysGlnSerGlyGluAsnLeuProTyrLeuValAlaTyrGlnAlaThrVal
TCCCAGACAAAGCAGAGTGGGGAGAACCTTCCTTACCTGGTAGCGTACCAAGCCACCGTG
AGGGTCTGTTTCGTCTCACCCTCTTGAAGGAATGGACCATCGCATGGTTCGGTGGCAC

1075 DRA3,

1082 CysAlaArgAlaGlnAlaProProProSerTrpAspGlnMetTrpLysCysLeuIleArg
TGCGCTAGGGCTCAAGCCCCTCCCCATCGTGGGACCAGATGTGGAAGTGTGTTGATTGCG
ACGCGATCCCGAGTTCGGGGAGGGGGTAGCACCCCTGGTCTACACCTTCACAACTAAGCG

1142 LeuLysProThrLeuHisGlyProThrProLeuLeuTyrArgLeuGlyAlaValGlnAsn
CTCAAGCCCACCCTCCATGGGCCAACCCCCTGCTATACAGACTGGGCGCTGTTTCAAGAT
GAGTTCGGGTGGGAGGTACCCGGTTGTGGGGACGATATGTCTGACCCGCGACAAGTCTTA

1156 NCOI,

1202 GluIleThrLeuThrHisProValThrLysTyrIleMetThrCysMetSerAlaAspLeu
GAAATCACCCCTGACGCACCCAGTCACCAAATACATCATGACATGCATGTCGGCCGACCTG
CTTTAGTGGGACTGCGTGGGTCACTGTTTATGTAGTACTGTACGTACAGCCGGCTGGAC

1236 BSPH1, 1240 DRD1, 1243 AVA3, 1251 EAG1 XMA3, 1256 DRD1,

1262 GluValValThrSerThrTrpValLeuValGlyGlyValLeuAlaAlaLeuAlaAlaTyr
GAGGTCGTACAGACACCTGGGTGCTCGTTGGCGGCGTCCTGGCTGCTTTGGCCGCGTAT
CTCCAGCAGTGCTCGTGGACCCACGAGCAACCGCCGAGGACCGACGAAACCGGCGCATA

FIG. 11B

1322 CysLeuSerThrGlyCysValValIleValGlyArgValValLeuSerGlyLysProAla
TGCCTGTCAACAGGCTGCGTGGTCATAGTGGGCAGGGTCGTCTTGTCCGGGAAGCCGGCA
ACGGACAGTTGTCCGACGCACCAGTATCACCCGTCCAGCAGAACAGGCCCTTCGGCCGT
1375 NAEI,

1382 IleIleProAspArgGluValLeuTyrArgGluPheAspGluMetGluGluCysSerGln
ATCATACCTGACAGGGAAGTCCTCTACCGAGAGTTTCGATGAGATGGAAGAGTGCTCTCAG
TAGTATGGACTGTCCCTTCAGGAGATGGCTCTCAAGCTACTCTACCTTCTCAGCAGAGTC
1391 DRD1,

1442 HisLeuProTyrIleGluGlnGlyMetMetLeuAlaGluGlnPheLysGlnLysAlaLeu
CACTTACCGTACATCGAGCAAGGGATGATGCTCGCCGAGCAGTTCAAGCAGAAGGCCCTC
GTGAATGGCATGTAGCTCGTTCCTACTACGAGCGGCTCGTCAAGTTCGTCTTCGGGGAG
1502 GlyLeuLeuGlnThrAlaSerArgGlnAlaGluValIleAlaProAlaValGlnThrAsn
GGCCTCCTGCAGACCGCGTCCCGTCAGGCAGAGGTTATCGCCCTGCTGTCCAGACCAAC
CCGGAGGACGTCTGGCGCAGGGCAGTCCGTCTCCAATAGCGGGGACGACAGGTCTGGTTG
1508 PSTI, 1513 TTH3I,

1562 TrpGlnLysLeuGluThrPheTrpAlaLysHisMetTrpAsnPheIleSerGlyIleGln
TGGCAAAACTCGAGACCTTCTGGGCGAAGCATATGTGGAAGTTCATCAGTGGGATACAA
ACCGTTTTTGAGCTCTGGAAGACCCGCTTCGTATACACCTGAAGTAGTCACCCTATGTT
1571 XHOI, 1592 NDEI,

1622 TyrLeuAlaGlyLeuSerThrLeuProGlyAsnProAlaIleAlaSerLeuMetAlaPhe
TACTTGGCGGGCTTGTCAACGCTGCCTGGTAACCCCGCCATTGCTTCATTGATGGCTTTT
ATGAACCGCCCGAACAGTTGCGACGGACCATTGGGGCGGTAACGAAGTAACTACCGAAAA
1649 BSTE2,

1682 ThrAlaAlaValThrSerProLeuThrThrSerGlnThrLeuLeuPheAsnIleLeuGly
ACAGCTGCTGTCAACAGCCCACTAACCCTAGCCAAACCCCTCTTCAACATATTGGGG
TGTCGACGACAGTGGTGGGTGATTGGTGATCGGTTTGGGAGGAGAAGTTGTATAACCCC
1683 ALWN1 PVU2,

1742 GlyTrpValAlaAlaGlnLeuAlaAlaProGlyAlaAlaThrAlaPheValGlyAlaGly
GGGTGGGTGGCTGCCAGCTCGCCGCCCCCGGTGCCGCTACTGCCTTTGTGGGCGCTGGC
CCCACCCACCGACGGGTGAGCGGGGGGGCCACGGCGATGACGGAAACACCCGCGACCG
1800 ESI1,

1802 LeuAlaGlyAlaAlaIleGlySerValGlyLeuGlyLysValLeuIleAspIleLeuAla
TTAGCTGGCGCCGCCATCGGCAGTGTGGACTGGGGAAGGTCCTCATAGACATCCTTGCA
AATCGACCGCGGGGTAGCCGTACAACCTGACCCCTTCCAGGAGTATCTGTAGGAACGT
1808 KAS1 NARI,

1862 GlyTyrGlyAlaGlyValAlaGlyAlaLeuValAlaPheLysIleMetSerGlyGluVal
GGGTATGGCGGGCGGTGGCGGGAGCTCTTGTGGCATTCAAGATCATGAGCGGTGAGGTC
CCCATACCGCGCCCGCACCGCCCTCGAGAACACCGTAAGTTCTAGTACTCGCCACTCCAG

FIG. 11C

3122 IleLeuArgLysSerArgArgPheAlaGlnAlaL uProValTrpAlaArgPr AspTyr
ATCCTGCGGAAGTCTCGGAGATTGCCCCAGGCCCTGCCGTTTGGGCGCGGCCGACTAT
TAGGACGCCTTCAGAGCCTCTAAGCGGGTCCGGGACGGGCAAACCCGCGCCGCCTGATA
3149 ALWN1, 3170 EAG1 XMA3,
3182 AsnProProLeuValGluThrTrpLysLysProAspTyrGluProProValValHisGly
AACCCCCGCTAGTGGAGACGTGGAAAAAGCCCGACTACGAACCACCTGTGGTCCATGGC
TTGGGGGGCGATCACCTCTGCACCTTTTTCGGGCTGATGCTTGGTGGACACCAGGTACCG
3223 HGIE2, 3235 NCOI,
3242 CysProLeuProProProLysSerProProValProProProArgLysLysArgThrVal
TGCCCCGTTCCACCTCCAAAGTCCCCTCCTGTGCCTCCGCCTCGGAAGAGCGGACGGTG
ACGGGCGAAGGTGGAGGTTTCAGGGGAGGACACGGAGGCGGAGCCTTCTTCGCCTGCCAC
3302 ValLeuThrGluSerThrLeuSerThrAlaLeuAlaGluLeuAlaThrArgSerPheGly
GTCCTCACTGAATCAACCCTATCTACTGCCTTGGCCGAGCTCGCCACCAGAAGCTTTGGC
CAGGAGTGACTTAGTTGGGATAGATGACGGAACCGGCTCGAGCGGTGGTCTTCGAAACCG
3338 SACI, 3352 HIND3,
3362 SerSerSerThrSerGlyIleThrGlyAspAsnThrThrThrSerSerGluProAlaPro
AGCTCCTCAACTTCCGGCATTACGGGCGACAATACGACAACATCCTCTGAGCCCCGCCCT
TCGAGGAGTTGAAGGCCGTAATGCCGCTGTTATGCTGTTGTAGGAGACTCGGGCGGGGA
3422 SerGlyCysProProAspSerAspAlaGluSerTyrSerSerMetProProLeuGluGly
TCTGGCTGCCCCCGACTCCGACGCTGAGTCTTCTCCTCCATGCCCCCCTGGAGGGG
AGACCGACGGGGGGCTGAGGCTGCGACTCAGGATAAGGAGGTACGGGGGGGACCTCCCC
3443 EAM11051,
3482 GluProGlyAspProAspLeuSerAspGlySerTrpSerThrValSerSerGluAlaAsn
GAGCCTGGGGATCCGGATCTTAGCGACGGGTCAATGGTCAACGGTCAGTAGTGAGGCCAAC
CTCGGACCCCTAGGCCTAGAATCGCTGCCAGTACCAGTTGCCAGTCATCACTCCGGTTG
3490 BAMHI, 3491 BSAB1, 3493 BSPE1,
3542 AlaGluAspValValCysCysSerMetSerTyrSerTrpThrGlyAlaLeuValThrPro
GCGGAGGATGTCGTGTGCTCAATGTCTTACTCTTGGACAGGCGCACTCGTCACCCCG
CGCCTCCTACAGCACACGACGAGTTACAGAATGAGAACCTGTCCGCGTGAGCAGTGGGGC
3595 DRA3,
3602 CysAlaAlaGluGluGlnLysLeuProIleAsnAlaLeuSerAsnSerLeuLeuArgHis
TGCGCCGCGGAAGAAGCAAACTGCCCATCAATGCACTAAGCAACTCGTTGCTACGTAC
ACGCGCGCCCTTCTTGTCTTTGACGGGTAGTTACGTGATTGCTTGAGCAACGATGCAGTG
3606 SAC2, 3617 ALWN1, 3661 PFLM1,
3662 HisAsnLeuValTyrSerThrThrSerArgSerAlaCysGlnArgGlnLysLysValThr
CACAATTTGGTGTATTCCACCACCTACGCACTGCTTGCCAAAGGCAGAGAAAGTCACA
GTGTTAAACCACATAAGGTGGTGGAGTGCGTCACGAACGGTTTCCGTCTTCTTTCAGTGT
3687 DRA3,
PheAspArgLeuGlnValLeuAspSerHisTyrGlnAspValLeuLysGluValLysAla

FIG. 11F

3722 TTTGACAGACTGCAAGTTCTGGACAGCCATTACCAGGACGTACTCAAGGAGGTTAAAGCA
AAACTGTCGTGACGTTCAAGACCTGTCGGTAATGGTCCTGCATGAGTTCTCCAATTTTCGT

AlaAlaSerLysValLysAlaAsnLeuLeuSerValGluGluAlaCysSerLeuThrPro
3782 GCGGCGTCAAAAGTGAAGGCTAACTTGCTATCCGTAGAGGAAGCTTGACGCTGACGCCC
CGCCGCAGTTTTCACTTCGATTGAACGATAGGCATCTCCTTCGAACGTCGGACTGCGGG
^

3822 HIND3,

ProHisSerAlaLysSerLysPheGlyTyrGlyAlaLysAspValArgCysHisAlaArg
3842 CCACACTCAGCCAAATCCAAGTTTGGTTATGGGGCAAAGACGTCCGTTGCCATGCCAGA
GGTGTGAGTCGGTTTAGGTTCAAACCAATACCCCGTTTTCTGCAGGCAACGGTACGGTCT
^

3881 AAT2, 3896 BGLI,

LysAlaValThrHisIleAsnSerValTrpLysAspLeuLeuGluAspAsnValThrPro
3902 AAGGCCGTAACCCACATCAACTCCGTGTGGAAGACCTTCTGGAAGACAATGTAACACCA
TTCCGGCATTGGGTGTAGTTGAGGCACACCTTTCTGGAAGACCTTCTGTTACATTGTGGT

IleAspThrThrIleMetAlaLysAsnGluValPheCysValGlnProGluLysGlyGly
3962 ATAGACACTACCATCATGGCTAAGAACGAGGTTTTCTGCGTTGACCTGAGAAGGGGGGT
TATCTGTGATGGTAGTACCGATTCTTGCTCCAAAGACGCAAGTCGGACTCTTCCCCCA

ArgLysProAlaArgLeuIleValPheProAspLeuGlyValArgValCysGluLysMet
4022 CGTAAGCCAGCTCGTCTCATCGTGTTCCTCGATCTGGGCGTGCAGCGTGTGCGAAAAGATG
GCATTCCGTCGAGCAGAGTAGCACAAGGGGCTAGACCCGCACGCGCACACGCTTTTCTAC

AlaLeuTyrAspValValThrLysLeuProLeuAlaValMetGlySerSerTyrGlyPhe
4082 GCTTTGTACGACGTGGTTACAAAGCTCCCCTTGCCGTGATGGGAAGCTCCTACGGATT
CGAAACATGCTGCACCAATGTTTCGAGGGGAACCGGCACTACCTTCGAGGATGCCTAAG

GlnTyrSerProGlyGlnArgValGluPheLeuValGlnAlaTrpLysSerLysLysThr
4142 CAATACTCACCAGGACAGCGGTTGAATTCCTCGTGCAAGCGTGGAAGTCCAAGAAAACC
GTTATGAGTGGTCTGTGCGCCCACTTAAGGAGCACGTTGCACCTTCAGGTTCTTTTGG
^

4166 ECORI,

ProMetGlyPheSerTyrAspThrArgCysPheAspSerThrValThrGluSerAspIle
4202 CCAATGGGGTTCTCGTATGATACCCGCTGCTTTGACTCCACAGTCACTGAGAGCGACATC
GGTTACCCCAAGAGCATACTATGGGCGACGAACTGAGGTGTCAGTGACTCTCGCTGTAG
^

4235 DRD1, 4242 ALWN1,

ArgThrGluGluAlaIleTyrGlnCysCysAspLeuAspProGlnAlaArgValAlaIle
4262 CGTACGGAGGAGGCAATCTACCAATGTTGTGACCTCGACCCCAAGCCCGTGGCCATC
GCATGCCTCCTCCGTTAGATGGTTACAACACTGGAGCTGGGGGTTGCGGCGCACCGGTAG
^

4307 BGLI, 4314 BALI,

LysSerLeuThrGluArgLeuTyrValGlyGlyProLeuThrAsnSerArgGlyGluAsn
4322 AAGTCCCTCACCGAGAGGCTTTATGTTGGGGGCCCTTTACCAATTCAAGGGGGGAGAAC
TTCAGGGAGTGGCTCTCCGAAATACAACCCCGGGAGAATGGTTAAGTTCCCCCTCTTG
^

4351 APAI,

CysGlyTyrArgArgCysArgAlaSerGlyValLeuThrThrSerCysGlyAsnThrLeu
4382 TGCGGCTATCGCAGGTGCCGCGGAGCGGCGTACTGACAACCTAGCTGTGGTAACACCCCTC

FIG. 11G

1922 ThrGluAspLeuValAsnLeuLeuProAlaIle LeuSerProGlyAlaLeuValValGly
ACGGAGGACCTGGTCAATCTACTGCCCGCCATCCTCTCGCCCGGAGCCCTCGTAGTCGGC
TGCTCCTGGACCAGTTAGATGACGGGCGGTAGGAGAGCGGGCCTCGGGAGCATCAGCCG
1928 TTH3I,
1982 ValValCysAlaAlaIleLeuArgArgHisValGlyProGlyGluGlyAlaValGlnTrp
GTGGTCTGTGCAGCAATACTGCGCCGGCACGTTGGCCCGGGCGAGGGGGCAGTGCACTGG
CACCAGACACSTCGTTATGACGCGGCGGTGCAACCGGGCCCGTCCCCCGTCACGTCACC
2004 NAEI, 2017 SMAI XMAI,
2042 MetAsnArgLeuIleAlaPheAlaSerArgGlyAsnHisValSerProThrHisTyrVal
ATGAACCGGCTGATAGCCTTCGCCTCCCGGGGAACCATGTTTCCCCACGCACTACGTG
TACTTGGCCGACTATCGGAAGCGGAGGGCCCCCTTGGTACAAAGGGGGTGCGTGATGCAC
2067 SMAI XMAI, 2093 DRA3,
2102 ProGluSerAspAlaAlaAlaArgValThrAlaIleLeuSerSerLeuThrValThrGln
CCGGAGAGCGATGCAGCTGCCCGCGTCACTGCCATACTCAGCAGCCTCACTGTAACCCAG
GGCCTCTCGCTACGTCGACGGGCGCAGTGACGGTATGAGTCGTCGGAGTGACATTGGGTC
2115 PVU2, 2159 ALWN1,
2162 LeuLeuArgArgLeuHisGlnTrpIleSerSerGluCysThrThrProCysSerGlySer
CTCCTGAGGCGACTGCACCACTGGATAAGCTCGGAGTGTAACCACTCCATGCTCCGGTTCC
GAGGACTCCGCTGACGTGGTCACCTATTCGAGCCTCACATGGTGAGGTACGAGGCCAAGG
2164 MST2, 2220 ECON1,
2222 TrpLeuArgAspIleTrpAspTrpIleCysGluValLeuSerAspPheLysThrTrpLeu
TGGCTAAGGGACATCTGGGACTGGATATGCGAGGTGTTGAGCGACTTTAAGACCTGGCTA
ACCGATTCCCTGTAGACCCTGACCTATACGCTCCACAACCTCGCTGAAATTCTGGACCGAT
2282 LysAlaLysLeuMetProGlnLeuProGlyIleProPheValSerCysGlnArgGlyTyr
AAAGCTAAGCTCATGCCACAGCTGCCTGGGATCCCCCTTTGTGTCCTGCCAGCGCGGGTAT
TTTCGATTTCGAGTACGGTGTGACGGACCCTAGGGGAACACAGGACGGTCGCGCCCCATA
2285 ESP1, 2300 PVU2, 2310 BAMHI,
2342 LysGlyValTrpArgGlyAspGlyIleMetHisThrArgCysHisCysGlyAlaGluIle
AAGGGGGTCTGGCGAGGGGACGGCATCATGCACACTCGCTGCCACTGTGGAGCTGAGATC
TTCCCCCAGACCGCTCCCCCTGCCGTAGTACGTGTGAGCGACGGTGACACCTCGACTCTAG
2402 ThrGlyHisValLysAsnGlyThrMetArgIleValGlyProArgThrCysArgAsnMet
ACTGGACATGTCAAAAACGGGACGATGAGGATCGTCGGTCTAGGACCTGCAGGAACATG
TGACCTGTACAGTTTTTGGCCCTGCTACTCCTAGCAGCCAGGATCCTGGACGTCCTTGAC
2425 BSAB1, 2441 AVR2, 2448 SSE83871, 2449 PSTI,
2462 TrpSerGlyThrPheProIleAsnAlaTyrThrThrGlyProCysThrProLeuProAla
TGGAGTGGGACCTTCCCCATTAATGCCTACACCACGGGCCCCCTGTACCCCCCTTCTGCG
ACCTCACCTGGAAGGGGTAATTACGGATGTGGTGCCCGGGGACATGGGGGGAAGGACGC
2480 ASE1, 2497 APAI,
ProAsnTyrThrPheAlaLeuTrpArgValSerAlaGluGluTyrValGluIleArgGln

FIG. 14D

2522 CCGAACTACACGTTTCGCGCTATGGAGGGTGTCTGCAGAGGAATACGTGGAGATAAAGGCAG
GGCTTGATGTGCAAGCGCGATACCTCCCACAGACGTCTCCTTATGCACCTCTATTCCGTC
2553 PSTI,
ValGlyAspPheHisTyrValThrGlyMetThrThrAspAsnLeuLysCysProCysGln
2582 GTGGGGGACTTCCACTACGTGACGGGTATGACTACTGACAATCTTAAATGCCCGTGCCAG
CACCCCTGAAGGTGATGCACTGCCCATACTGATGACTGTTAGAATTTACGGGCACGGTC
2594 DRA3,
ValProSerProGluPhePheThrGluLeuAspGlyValArgLeuHisArgPheAlaPro
2642 GTCCCATCGCCGAATTTTTCACAGAATTGGACGGGGTGCGCCTACATAGGTTTTCGCCCC
CAGGGTAGCGGGCTTAAAAAGTGTCTTAACCTGCCCCACGCGGATGTATCCAAACGCGGG
ProCysLysProLeuLeuArgGluGluValSerPheArgValGlyLeuHisGluTyrPro
2702 CCCTGCAAGCCCTTGCTGCGGGAGGAGGTATCATTAGAGTAGGACTCCACGAATACCCG
GGGACGTTTCGGGAACGACGCCCTCCTCCATAGTAAGTCTCATCCTGAGGTGCTTATGGGC
2757 HGIE2,
ValGlySerGlnLeuProCysGluProGluProAspValAlaValLeuThrSerMetLeu
2762 GTAGGGTCGCAATTACCTTGCGAGCCCGAACCGGACGTGGCCGTGTTGACGTCCATGCTC
CATCCAGCGTTAATGGAACGCTCGGGCTTGGCCTGCACCGGCACAATGCAGGTACGAG
2809 AAT2,
ThrAspProSerHisIleThrAlaGluAlaAlaGlyArgArgLeuAlaArgGlySerPro
2822 ACTGATCCCTCCCATATAACAGCAGAGGCGGCCGGCGAAGGTTGGCGAGGGGATCACCC
TGACTAGGGAGGGTATATTGTCGTCTCCGCCGGCCCGCTTCCAACCGCTCCCTAGTGGG
2850 EAG1 XMA3,
ProSerValAlaSerSerSerAlaSerGlnLeuSerAlaProSerLeuLysAlaThrCys
2882 CCCTCTGTGGCCAGCTCCTCGGCTAGCCAGCTATCCGCTCCATCTCTCAAGGCAACTTGC
GGGAGACACCGGTCGAGGAGCCGATCGGTTCGATAGGCGAGGTAGAGAGTTCGGTTGAACG
2889 BALI, 2903 NHEI,
ThrAlaAsnHisAspSerProAspAlaGluLeuIleGluAlaAsnLeuLeuTrpArgGln
2942 ACCGCTAACCATGACTCCCCTGATGCTGAGCTCATAGAGGCCAACCTCCTATGGAGGCAG
TGGCGATTGGTACTGAGGGGACTACGACTCGAGTATCTCCGGTTGGAGGATACCTCCGTC
2966 ESP1, 2969 SACI,
GluMetGlyGlyAsnIleThrArgValGluSerGluAsnLysValValIleLeuAspSer
3002 GAGATGGGCGGCAACATCACCAGGGTTGAGTCAGAAAACAAAGTGGTGATTCTGGACTCC
CTCTACCCGCCGTTGTAGTGGTCCCAACTCAGTCTTTTGTTCACCACTAAGACCTGAGG
3062 PheAspProLeuValAlaGluGluAspGluArgGluIleSerValProAlaGluIleLeu
TTCGATCCGCTTGTGGCGGAGGAGGACGAGCGGGAGATCTCCGTACCCGCAGAAATCCTG
AAGCTAGGCGAACACCGCCTCCTCCTGCTCGCCCTCTAGAGGCATGGGCGTCTTTAGGAC
3096 BGL2,
ArgLysSerArgArgPheAlaGlnAlaLeuProValTrpAlaArgProAspTyrAsnPro
3122 CGGAAGTCTCGGAGATTCGCCCAGGCCCTGCCCGTTTGGGCGCGGCCGACTATAACCCC

FIG. 14E

3782 SerLysValLysAlaAsnLeuLeuSerValGluGluAlaCysS rLeuThrProProHis
TCAAAAGTGAAGGCTAACTTGCTATCCGTAGAGGAAGCTTGCAGCCTGACGCCCCACAC
AGTTTTCACTTCCGATTGAACGATAGGCATCTCCTTCGAACGTCGGACTGCGGGGGTGTG
3816 HIND3,
3842 SerAlaLysSerLysPheGlyTyrGlyAlaLysAspValArgCysHisAlaArgLysAla
TCAGCCAAATCCAAGTTTGGTTATGGGGCAAAGACGTCCGTTGCCATGCCAGAAAGGCC
AGTCGGTTTAGGTTCAAACCAATACCCCGTTTTCTGCAGGCAACGGTACGGTCTTTCCGG
3875 AAT2, 3890 BGLI,
3902 ValThrHisIleAsnSerValTrpLysAspLeuLeuGluAspAsnValThrProIleAsp
GTAACCCACATCAACTCCGTGTGGAAAGACCTTCTGGAAGACAATGTAACACCAATAGAC
CATTGGGTGTAGTTGAGGCACACCTTTCTGGAAGACCTTCTGTTACATTGTGGTTATCTG
3962 ThrThrIleMetAlaLysAsnGluValPheCysValGlnProGluLysGlyGlyArgLys
ACTACCATCATGGCTAAGAACGAGGTTTTCTGCGTTTCAGCCTGAGAAGGGGGGTGTAAG
TGATGGTAGTACCGATTCTTGCTCCAAAGACGCAAGTCGGACTCTTCCCCCAGCATTC
4022 ProAlaArgLeuIleValPheProAspLeuGlyValArgValCysGluLysMetAlaLeu
CCAGCTCGTCTCATCGTGTTCCTCGATCTGGGCGTGCGCGTGTGCGAAAAGATGGCTTTG
GGTCGAGCAGAGTAGCACAAGGGGCTAGACCCGCACGCGCACACGCTTTTCTACCGAAAC
4082 TyrAspValValThrLysLeuProLeuAlaValMetGlySerSerTyrGlyPheGlnTyr
TACGACGTGGTTACAAAGCTCCCCTTGCCGTGATGGGAAGCTCCTACGGATTCCAATAC
ATGCTGCACCAATGTTTCGAGGGGAACCGGCACTACCCTTCGAGGATGCCTAAGGTTATG
4142 SerProGlyGlnArgValGluPheLeuValGlnAlaTrpLysSerLysLysThrProMet
TCACCAGGACAGCGGGTTGAATTCTCGTGCAAGCGTGGAAGTCCAAGAAAACCCCAATG
AGTGGTCTGTGCCCCAATTAAAGGAGCACGTTTCGCACCTTCAGGTTCTTTGGGGTTAC
4160 ECORI,
4202 GlyPheSerTyrAspThrArgCysPheAspSerThrValThrGluSerAspIleArgThr
GGGTTCTCGTATGATACCCGCTGCTTTGACTCCACAGTCACTGAGAGCGACATCCGTACG
CCCAAGAGCATACTATGGGCGACGAACTGAGGTGTCAGTGACTCTCGCTGTAGGCATGC
4229 DRD1, 4236 ALWN1,
4262 GluGluAlaIleTyrGlnCysCysAspLeuAspProGlnAlaArgValAlaIleLysSer
GAGGAGGCAATCTACCAATGTTGTGACCTCGACCCCCAAGCCCCGCTGGCCATCAAGTCC
CTCCTCCGTTAGATGGTTACAACACTGGAGCTGGGGGTTTCGGGCGCACCGGTAGTTCAGG
4301 BGLI, 4308 BALI,
4322 LeuThrGluArgLeuTyrValGlyGlyProLeuThrAsnSerArgGlyGluAsnCysGly
CTCACCAGAGAGGCTTTATGTTGGGGGCCCTCTTACCAATTCAAGGGGGGAGAAGTGGCGC
GAGTGGCTCTCCGAAATACAACCCCGGGAGAATGGTTAAGTTCCTCCCTCTTGACGCCG
4345 APAI,
4382 TyrArgArgCysArgAlaSerGlyValLeuThrThrSerCysGlyAsnThrLeuThrCys
TATCGAGGTGCCGCGCGAGCGGCGTACTGACAACCTAGCTGTGGTAACACCCCTCACTTGC
ATAGCGTCCACGGCGCGCTCGCCGCATGACTGTTGATCGACACCATTGTGGGAGTGAACG

FIG. 14G

4442 TyrIleLysAlaArgAlaAlaCysArgAlaAlaGlyLeuGlnAspCysThrMetLeuVal
TACATCAAGGCCCCGGGCAGCCTGTCTGAGCCGCGAGGGCTCCAGGACTGCACCATGCTCGTG
ATGTAGTTCCGGGCCCCGTCTGGACAGCTCGGCGTCCCCGAGGTCTTGACGTGGTACGAGCAC
4452 SMAI XMAI,
CysGlyAspAspLeuValValIleCysGluSerAlaGlyValGlnGluAspAlaAlaSer
4502 TGTGGCGACGACTTAGTCGTTATCTGTGAAAGCGCGGGGGTCCAGGAGGACGCGGCGAGC
ACACCGCTGCTGAATCAGCAATAGACACTTTCGCGCCCCCAGGTCTCTCTGCGCCGCTCG
4508 DRD1, 4511 TTH3I,
LeuArgAlaPheThrGluAlaMetThrArgTyrSerAlaProProGlyAspProProGln
4562 CTGAGAGCCTTCACGGAGGCTATGACCAGGTACTCCGCCCCCCTGGGGACCCCCACAA
GACTCTCGGAAGTGCTCCGATACTGGTCCATGAGGCGGGGGGACCCCTGGGGGGTGT
ProGluTyrAspLeuGluLeuIleThrSerCysSerSerAsnValSerValAlaHisAsp
4622 CCAGAATACGACTTGGAGCTCATAACATCATGCTCCTCCAACGTGTCTAGTCGCCCACGAC
GGTCTTATGCTGAACCTCGAGTATTGTAGTACGAGGAGGTTGCACAGTCAGCGGGTGTG
4637 SACI,
GlyAlaGlyLysArgValTyrTyrLeuThrArgAspProThrThrProLeuAlaArgAla
4682 GCGCTGGAAAGAGGGTCTACTACCTCACCCGTGACCCTACAACCCCCCTCGCGAGAGCT
CCGCGACCTTTCTCCAGATGATGGAGTGGGCACTGGGATGTTGGGGGAGCGCTCTCGA
4731 NRUI,
AlaTrpGluThrAlaArgHisThrProValAsnSerTrpLeuGlyAsnIleIleMetPhe
4742 GCGTGGGAGACAGCAAGACACACTCCAGTCAATTCTGGCTAGGCAACATAATCATGTTT
CGCACCTCTGTCTGTTCTGTGTGAGGTCAGTTAAGGACCGATCCGTTGTATTAGTACAAA
AlaProThrLeuTrpAlaArgMetIleLeuMetThrHisPhePheSerValLeuIleAla
4802 GCCCCACACTGTGGGCGAGGATGATACTGATGACCCATTTCTTTAGCGTCTTATAGCC
CGGGGGTGTGACACCCGCTCCTACTATGACTACTGGGTAAAGAAATCGCAGGAATATCGG
4806 PFLM1, 4807 DRA3,
ArgAspGlnLeuGluGlnAlaLeuAspCysGluIleTyrGlyAlaCysTyrSerIleGlu
4862 AGGGACAGCTTGAACAGGCCCTCGATTGCGAGATCTACGGGGCTGCTACTCCATAGAA
TCCCTGGTCAACTTGTCCGGGAGCTAACGCTCTAGATGCCCCGACGATGAGGTATCTT
4893 BGL2,
ProLeuAspLeuProProIleIleGlnArgLeuHisGlyLeuSerAlaPheSerLeuHis
4922 CCACTGGATCTACCTCCAATCATTCAAAGACTCCATGGCCTCAGCGCATTTTCACTCCAC
GGTGACCTAGATGGAGGTTAGTAAGTTTCTGAGGTACCGGAGTCGCGTAAAAGTGAGGTG
4954 NCOI,
SerTyrSerProGlyGluIleAsnArgValAlaAlaCysLeuArgLysLeuGlyValPro
4982 AGTTACTCTCCAGGTGAAATCAATAGGGTGGCCGCATGCCTCAGAAAACCTGGGGTACCG
TCAATGAGAGGTCCACTTTAGTTATCCACCGCGGTACGGAGTCTTTTGAACCCCATGGC
5015 SPHI, 5035 KPNI,
ProLeuArgAlaTrpArgHisArgAlaArgSerValArgAlaArgLeuLeuAlaArgGly

FIG. 14H

TCCCGAGTTCGGGGAGGGGGTAGCACCTGGTCTACACCTTCACAACTAAGCGGAGTTC
ProThrLeuHisGlyProThrProLeuLeuTyrArgLeuGlyAlaValGlnAsnGluIle
1142 CCCACCTCCATGGGCCAACACCCCTGCTATACAGACTGGGCGCTGTTTCTGAGAATGAAATC
GGGTGGGAGGTACCCGGTTGTGGGGACGATATGTCTGACCCGCGACAAGTCTTACTTTAG
1150 NCOI,
ThrLeuThrHisProValThrLysTyrIleMetThrCysMetSerAlaAspLeuGluVal
1202 ACCCTGACGCACCCAGTCACCAAATACATCATGACATGCATGTCGGCCGACCTGGAGGTC
TGGGACTGCGTGGGTGAGTGGTTTATGTAGTACTGTACGTACAGCCGGCTGGACCTCCAG
1230 BSPH1, 1234 DRD1, 1237 AVA3, 1245 EAG1 XMA3, 1250 DRD1,
ValThrSerThrTrpValLeuValGlyGlyValLeuAlaAlaLeuAlaAlaTyrCysLeu
1262 GTCACGAGCACCTGGGTGCTCGTTGGCGGCGTCTGGCTGCTTTGGCCGCGTATTGCGCTG
CAGTGCTCGTGGACCCACGAGCAACCGCCGAGGACCGACGAAACGGCGCATAACGGAC
SerThrGlyCysValValIleValGlyArgValValLeuSerGlyLysProAlaIleIle
1322 TCAACAGGCTGCGTGGTCATAGTGGGCAGGGTCGTCTTGTCCGGGAAGCCGGCAATCATA
AGTTGTCCGACGCACCAAGTATCACCCGTCCAGCAGAACAGGCCCTTCGGCCGTTAGTAT
1369. NAEI,
ProAspArgGluValLeuTyrArgGluPheAspGluMetGluGluCysSerGlnHisLeu
1382 CCTGACAGGGAAGTCCTCTACCGAGAGTTCGATGAGATGGAAGAGTGCTCTCAGCACTTA
GGACTGTCCCTTCAGGAGATGGCTCTCAAGCTACTCTACCTTCTCAGGAGAGTCGTGAAT
1385 DRD1,
ProTyrIleGluGlnGlyMetMetLeuAlaGluGlnPheLysGlnLysAlaLeuGlyLeu
1442 CCGTACATCGAGCAAGGGATGATGCTCGCCGAGCAGTTCAAGCAGAAGGCCCTCGGCCCTC
GGCATGTAGCTCGTTCCTACTACGAGCGGCTCGTCAAGTTCGTCTTCGGGGAGCCGGAG
LeuGlnThrAlaSerArgGlnAlaGluValIleAlaProAlaValGlnThrAsnTrpGln
1502 CTGCGAGACCGCGTCCCGTCAGGCAGAGGTTATCGCCCTGCTGTCCAGACCAACTGGCAA
GACGTCTGGCGCAGGGCAGTCCGTCTCCAATAGCGGGGACGACAGGTCTGGTTGACCGTT
1502 PSTI, 1507 TTH3I,
LysLeuGluThrPheTrpAlaLysHisMetTrpAsnPheIleSerGlyIleGlnTyrLeu
1562 AAATCTGAGACCTTCTGGGCGAAGCATATGTGGAATTCATCAGTGGGATACAATACTTG
TTTGAGCTCTGGAAGACCCGCTTCGTATACACCTTGAAGTAGTCACCTATGTTATGAAC
1565 XHOI, 1586 NDEI,
AlaGlyLeuSerThrLeuProGlyAsnProAlaIleAlaSerLeuMetAlaPheThrAla
1622 GCGGGCTTGTCACGCTGCCTGGTAACCCCGCCATTGCTTCATTGATGGCTTTTACAGCT
CGCCCGAACAGTTGCGACGGACCATTTGGGGCGGTAACGAAGTAACTACCGAAAATGTCTGA
1643 BSTE2, 1677 ALWN1 PVU2,
AlaValThrSerProLeuThrThrSerGlnThrLeuLeuPheAsnIleLeuGlyGlyTrp
1682 GCTGTACACAGCCCACTAACCCTAGCCAAACCCCTCCTCTTCAACATATTGGGGGGGTGG
CGACAGTGGTGGGTGATTGGTGATCGGTTTGGGAGGAGAAGTTGTATAACCCCCCACC

FIG. 17C

- 1742 ValAlaAlaGlnLeuAlaAlaPr GlyAlaAlaThrAlaPheValGlyAlaGlyLeuAla
GTGGCTGCCAGCTCGCCGCCCGGTGCCGCTACTGCCTTTGTGGGCGCTGGCTTAGCT
CACCAGCGGGTCGAGCGGGGGGCCACGGCGATGACGGAAACACCCGCGACCGAATCGA
1794 ESP1,
- 1802 GlyAlaAlaIleGlySerValGlyLeuGlyLysValLeuIleAspIleLeuAlaGlyTyr
GGCGCCGCCATCGGCAGTGTGGACTGGGGAAGGTCCTCATAGACATCCTTGCAGGGTAT
CCGCGGCGGTAGCCGTCACAACCTGACCCCTTCCAGGAGTATCTGTAGGAACGTCCCAT
1802 KAS1 NARI,
- 1862 GlyAlaGlyValAlaGlyAlaLeuValAlaPheLysIleMetSerGlyGluValProSer
GGCGCGGGCGTGGCGGGAGCTCTTGTGGCATTCAAGATCATGAGCGGTGAGGTCCCTCC
CCGCGCCCGCACCGCCCTCGAGAACACCGTAAGTTCTAGTACTCGCCACTCCAGGGGAGG
1878 SACI, 1899 BSPH1,
- 1922 ThrGluAspLeuValAsnLeuLeuProAlaIleLeuSerProGlyAlaLeuValValGly
ACGGAGGACCTGGTCAATCTACTGCCCGCCATCCTCTCGCCCGAGCCCTCGTAGTCGGC
TGCTCTCGGACCAGTTAGATGACGGGCGGTAGGAGAGCGGGCCTCGGGAGCATCAGCCG
1928 TTH3I,
- 1982 ValValCysAlaAlaIleLeuArgArgHisValGlyProGlyGluGlyAlaValGlnTrp
GTGGTCTGTGCAGCAATACTGCGCCGGCACGTTGGCCCGGGCGAGGGGCGAGTGCAGTGG
CACCAGACACGTCGTTATGACGGGCGGTGCAACCGGGCCCGCTCCCCCGTCACGTCCAC
2004 NAEI, 2017 SMAI XMAI,
- 2042 MetAsnArgLeuIleAlaPheAlaSerArgGlyAsnHisValSerProThrHisTyrVal
ATGAACCGGCTGATAGCCTTCGCCTCCCGGGGAACCATGTTTCCCCACGCACTACGTG
TACTTGGCCGACTATCGGAAGCGGAGGGCCCTTGGTACAAAGGGGTGCGTGATGCAC
2067 SMAI XMAI, 2093 DRA3,
- 2102 ProGluSerAspAlaAlaAlaArgValThrAlaIleLeuSerSerLeuThrValThrGln
CCGGAGAGCGATGCAGCTGCCCGCGTCACTGCCATACTCAGCAGCCTCACTGTAACCCAG
GGCCTCTCGCTACGTGACGGGCGCAGTGACGGTATGAGTCGTGCGAGTGACATTGGGTC
2115 PVU2, 2159 ALWN1,
- 2162 LeuLeuArgArgLeuHisGlnTrpIleSerSerGluCysThrThrProCysSerGlySer
CTCCTGAGGCGACTGCACCAGTGGATAAGCTCGGAGTGTACCACTCCATGCTCCGGTTCC
GAGGACTCCGCTGACGTGGTCACCTATTCGAGCCTCACATGGTGAGGTACGAGGCCAAGG
2164 MST2, 2220 ECON1,
- 2222 TrpLeuArgAspIleTrpAspTrpIleCysGluValLeuSerAspPheLysThrTrpLeu
TGGCTAAGGGACATCTGGGACTGGATATGCGAGGTGTTGAGCGACTTTAAGACCTGGCTA
ACCGATTCCCTGTAGACCCTGACCTATACGCTCCACAACCTCGCTGAAATTCTGACCGAT
2282 LysAlaLysLeuMetProGlnLeuProGlyIleProPheValSerCysGlnArgGlyTyr
AAAGCTAAGCTCATGCCACAGCTGCCTGGGATCCCCTTTGTGTCTGCCAGCGCGGGTAT
TTTCGATTGAGTACGGTGTGACGGACCCTAGGGGAAACACAGGACGGTGCGCCCCATA
2285 ESP1, 2300 PVU2, 2310 BAMHI,

FIG. 17D

662 ThrCysValThrGlnThrValAspPheSerLeuAspPrr ThrPheThrIleGluThrIle
ACGTGTGTCACCCAGACAGTCGATTTTCAGCCTTGACCCTACCTTCACCATTGAGACAATC
TGCACACAGTGGGTCTGTCAGCTAAAGTCGGAAGTGGGATGGAAGTGGTAACTCTGTTAG

722 ThrLeuProGlnAspAlaValSerArgThrGlnArgArgGlyArgThrGlyArgGlyLys
ACGCTCCCCAAGATGCTGTCTCCCGCACTCAACGTCGGGGCAGGACTGGCAGGGGGGAG
TGCGAGGGGGTTCTACGACAGAGGGCGTGAGTTGCAGCCCCGTCCTGACCCTCCCCCTTC

782 ProGlyIleTyrArgPheValAlaProGlyGluArgProSerGlyMetPheAspSerSer
CCAGGCATCTACAGATTTGTGGCACCGGGGGAGCGCCCCCTCCGGCATGTTTCGACTCGTCC
GGTCCGTAGATGTCTAAACACCGTGGCCCCCTCGCGGGGAGGCGGTACAAGCTGAGCAGG

816 BGLI, 833 DRD1,

842 ValLeuCysGluCysTyrAspAlaGlyCysAlaTrpTyrGluLeuThrProAlaGluThr
GTCCTCTGTGAGTGCTATGACGCAGGCTGTGCTTGGTATGAGCTCACGCCCGCGGAGACT
CAGGAGACACTCACGATACTGCGTCCGACACGAACCATACTCGAGTGGGGCGGCTCTGA

881 SACI,

902 ThrValArgLeuArgAlaTyrMetAsnThrProGlyLeuProValCysGlnAspHisLeu
ACAGTTAGGCTACGAGCGTACATGAACACCCCGGGGCTTCCCGTGTGCCAGGACCATCTT
TGTCATCCGATGCTCGCATGTACTTGTGGGGCCCCGAAGGGCACACGGTCTTGTTAGAA

931 SMAI XMAI,

962 GluPheTrpGluGlyValPheThrGlyLeuThrHisIleAspAlaHisPheLeuSerGln
GAATTTTGGGAGGGCGTCTTTACAGGCCTCACTCATATAGATGCCCACTTTCTATCCAG
CTTAAACCCTCCCGCAGAAATGTCCGGAGTGAGTATATCTACGGGTGAAAGATAGGGTC

985 STUI,

1022 ThrLysGlnSerGlyGluAsnLeuProTyrLeuValAlaTyrGlnAlaThrValCysAla
ACAAAGCAGAGTGGGGAGAACCTTCCTTACCTGGTAGCGTACCAAGCCACCGTGTGCGCT
TGTTTCGTCTCACCCTCTTGGGAAGGAATGGACCATCGCATGGTTCGGTGGCACACGCGA

1069 DRA3,

1082 ArgAlaGlnAlaProProProSerTrpAspGlnMetTrpLysCysLeuIleArgLeuLys
AGGGCTCAAGCCCTCCCCATCGTGGGACCAGATGTGGAAGTGTGTTGATTGCGCTCAAG
TCCCGAGTTCGGGGAGGGGTAGCACCTGGTCTACACCTTCACAACTAAGCGGAGTTC

1142 ProThrLeuHisGlyProThrProLeuLeuTyrArgLeuGlyAlaValGlnAsnGluIle
CCCACCCTCCATGGGCCAACACCCCTGCTATACAGACTGGGCGCTGTTTCTGAGTAAATC
GGGTGGGAGGTACCCGTTGTGGGGACGATATGTCTGACCCGCGACAAGTCTTACTTTAG

1150 NCOI,

1202 ThrLeuThrHisProValThrLysTyrIleMetThrCysMetSerAlaAspLeuGluVal
ACCCTGACGCACCCAGTCACCAATACATCATGACATGCATGTCGGCCGACCTGGAGGTC
TGGGACTGCGTGGGTCAGTGGTTTATGTAGTACTGTACGTACAGCCGGCTGGACCTCCAG

1230 BSPH1, 1234 DRD1, 1237 AVA3, 1245 EAG1 XMA3, 1250 DRD1,

1262 ValThrSerThrTrpValLeuValGlyGlyValLeuAlaAlaLeuAlaAlaTyrCysLeu
GTCACGAGCACCTGGGTGCTCGTTGGCGGCGTCTGGCTGCTTTGGCCGCGTATTGCTG

FIG. 18B

2522 ProAsnTyrThrPheAlaLeuTrpArgValSerAlaGluGluTyrValGluIleArgGln
CCGAACCTACACGTTTCGCGCTATGGAGGGTGTCTGCAGAGGAATACGTGGAGATAAGGCAG
GGCTTGATGTGCAAGCGCGATACCTCCACAGACGTCTCCTTATGCACCTCTATTCCGTC
2553 PSTI,
2582 ValGlyAspPheHisTyrValThrGlyMetThrThrAspAsnLeuLysCysProCysGln
GTGGGGGACTTCCACTACGTGACGGGTATGACTACTGACAATCTTAAATGCCCGTGCCAG
CACCCCTGAAGGTGATGCACTGCCATACTGATGACTGTTAGAATTTACGGGCACGGTC
2594 DRA3,
2642 ValProSerProGluPhePheThrGluLeuAspGlyValArgLeuHisArgPheAlaPro
GTCCCATCGCCCGAATTTTTCACAGAATTGGACGGGGTGGCGCTACATAGGTTTGGCGCCC
CAGGGTAGCGGGCTTAAAAAGTGTCTTAACCTGCCCCACGCGGATGTATCCAAACGCGGG
2702 ProCysLysProLeuLeuArgGluGluValSerPheArgValGlyLeuHisGluTyrPro
CCCTGCAAGCCCTTGCTGCGGGAGGAGGTATCATTGAGAGTAGGACTCCACGAATACCCG
GGGACGTTTCGGGAACGACGCCCTCCTCCATAGTAAGTCTCATCCTGAGGTGCTTATGGGC
2757 HGIE2,
2762 ValGlySerGlnLeuProCysGluProGluProAspValAlaValLeuThrSerMetLeu
GTAGGGTTCGCAATTACCTTGCGAGCCCGAACCAGGACGTGGCCGTGTTGACGTCCATGCTC
CATCCAGCGTTAATGGAACGCTCGGGCTTGGCCTGCACCGGCACAACCTGCAGGTACGAG
2809 AAT2,
2822 ThrAspProSerHisIleThrAlaGluAlaAlaGlyArgArgLeuAlaArgGlySerPro
ACTGATCCCTCCCATATAACAGCAGAGGCGGCGGCGGAAGGTTGGCGAGGGGATCACCC
TGACTAGGGAGGGTATATTGTCGTCTCCGCCGCCCGCTTCCAACCGCTCCCTAGTGGG
2850 EAG1 XMA3,
2882 ProSerValAlaSerSerSerAlaSerGlnLeuSerAlaProSerLeuLysAlaThrCys
CCCTCTGTGGCCAGCTCCTCGGCTAGCCAGCTATCCGCTCCATCTCTCAAGGCAACTTGC
GGGAGACACCGGTCGAGGAGCCGATCGGTGATAGGCGAGGTAGAGAGTTCCGTTGAACG
2889 BALI, 2903 NHEI,
2942 ThrAlaAsnHisAspSerProAspAlaGluLeuIleGluAlaAsnLeuLeuTrpArgGln
ACCGCTAACCATGACTCCCCTGATGCTGAGCTCATAGAGGCCAACCTCCTATGGAGGCAG
TGGCGATTGGTACTGAGGGGACTACGACTCGAGTATCTCCGGTTGGAGGATACCTCCGTC
2966 ESP1, 2969 SACI,
3002 GluMetGlyGlyAsnIleThrArgValGluSerGluAsnLysValValIleLeuAspSer
GAGATGGGCGGCAACATCACCAGGGTTGAGTCAGAAAACAAAGTGGTGATTCTGGACTCC
CTCTACCCGCCGTTGTAGTGGTCCCAACTCAGTCTTTTGTTCACCACTAAGACCTGAGG
3062 PheAspProLeuValAlaGluGluAspGluArgGluIleSerValProAlaGluIleLeu
TTCGATCCGCTTGTTGGCGGAGGAGGACGCGGGAGATCTCCGTACCCGCAGAAATCCTG
AAGCTAGGCGAACACCGCCTCCTCCTGCTCGCCCTCTAGAGGCATGGGCGTCTTTAGGAC
3096 BGL2,
ArgLysSerArgArgPheAlaGlnAlaLeuProValTrpAlaArgProAspTyrAsnPro

FIG. 18E

5042 ProLeuArgAlaTrpArgHisArgAlaArgSerValArgAlaArgLeuLeuAlaArgGly
CCCTTGCGAGCTTGGAGACACCGGGCCCGGAGCGTCCGCGCTAGGCTTCTGGCCAGAGGA
GGGAACGCTCGAACCTCTGTGGCCCGGGCTCGCAGGCGCGATCCGAAGACCGGTCTCCT
5064 APAI, 5091 BALI,
5102 GlyArgAlaAlaIleCysGlyLysTyrLeuPheAsnTrpAlaValArgThrLysLeuLys
GGCAGGGCTGCCATATGTGGCAAGTACCTCTTCAACTGGGCAGTAAGAACAAGCTCAAA
CCGTCCCGACGGTATACACCGTTTCATGGAGAAGTTGACCGGTCATTCTTGTTCGAGTTT
5113 NDEI,
5162 LeuThrProIleAlaAlaAlaGlyGlnLeuAspLeuSerGlyTrpPheThrAlaGlyTyr
CTCACTCCAATAGCGGCCGCTGGCCAGCTGGACTTGTCCGGCTGGTTCACGGCTGGCTAC
GAGTGAGGTTATCGCCGGCGACCGGTTCGACCTGAACAGGCCGACCAAGTGCCGACCGATG
5174 NOTI, 5175 EAGI XMA3, 5182 BALI, 5186 PVU2,
5222 SerGlyGlyAspIleTyrHisSerValSerHisAlaArgProArgTrpIleTrpPheCys
AGCGGGGGAGACATTTATCACAGCGTGTCTCATGCCCGGGCCCCGCTGGATCTGGTTTTGC
TCGCCCCCTCTGTAAATAGTGTGCGACAGAGTACGGGCCGGGGCGACCTAGACCAAACG
5240 DRA3,
5282 LeuLeuLeuLeuAlaAlaGlyValGlyIleTyrLeuLeuProAsnArgMetSerThrAsn
CTACTCCTGCTTGCTGCAGGGGTAGGCATCTACCTCCTCCCCAACCGAATGAGCACGAAT
GATGAGGACGAACGACGTCCCCATCCGTAGATGGAGGAGGGGTGGCTTACTCGTGCTTA
5295 PSTI,
5342 ProLysProGlnArgLysThrLysArgAsnThrAsnArgArgProGlnAspValLysPhe
CCTAAACCTCAAAGAAAGACCAACGTAACACCAACCGCGGCCGCGAGGACGTCAAGTTC
GGATTTGGAGTTTCTTTCTGGTTTGCATTGTGGTTGGCCGCCGGCGTCTGCAGTTCAAG
5380 NOTI, 5381 EAGI XMA3, 5390 AAT2, 5401 SMAI XMAI,
5402 ProGlyGlyGlyGlnIleValGlyGlyValTyrLeuLeuProArgArgGlyProArgLeu
CCGGGTGGCGGTGAGATCGTTGGTGGAGTTTACTTGTGCGCGCAGGGGCCCTAGATTG
GGCCACCGCCAGTCTAGCAACCACCTCAATGAACAACGGCGCGTCCCCGGGATCTAAC
5449 APAI,
5462 GlyValArgAlaThrArgLysThrSerGluArgSerGlnProArgGlyArgArgGlnPro
GGTGTGCGCGGACGAGAAAGACTTCCGAGCGGTGCAACCTCGAGGTAGACGTCAGCCT
CCACACGCGCGCTGCTCTTTCTGAAGGCTCGCCAGCGTTGGAGCTCCATCTGCAGTCGGA
5467 BSSH2, 5478 XMNI, 5502 XHOI, 5511 AAT2,
5522 IleProLysAlaArgArgProGluGlyArgThrTrpAlaGlnProGlyTyrProTrpPro
ATCCCCAAGGCTCGTCGGCCCGAGGGCAGGACCTGGGCTCAGCCCCGGGTACCCTTGGCCC
TAGGGGTTCCGAGCAGCCGGGCTCCCGTCTGGACCCGAGTCCGGGCCCATGGGAACCGGG
5548 ALWN1, 5558 ESP1, 5564 SMAI XMAI, 5568 KPNI,
5582 LeuTyrGlyAsnGluGlyCysGlyTrpAlaGlyTrpLeuLeuSerProArgGlySerArg
CTCTATGGCAATGAGGGCTGCGGGTGGGCGGGATGGCTCCTGTCTCCCCGTGGCTCTCGG
GAGATACCGTTACTCCCGACGCCACCCGCCCTACCGAGGACAGAGGGGCACCGAGAGCC

FIG. 18I

4229 DRD1, 4236 ALWN1,
4262 GluGluAlaIleTyrGlnCysCysAspLeuAspProGlnAlaArgValAlaIleLysSer
GAGGAGGCAATCTACCAATGTTGTGACCTCGACCCCCAAGCCCGCTGGCCATCAAGTCC
CTCCTCCGTTAGATGGTTACAACACTGGAGCTGGGGGTTCTGGGCGCACCGGTAGTTCAGG
4301 BGLI, 4308 BALI,
4322 LeuThrGluArgLeuTyrValGlyGlyProLeuThrAsnSerArgGlyGluAsnCysGly
CTCACCGAGAGGCTTTATGTTGGGGGCCCTCTTACCAATTCAAGGGGGGAGAACTGCGGC
GAGTGGCTCTCCGAAATACAACCCCGGAGAATGGTTAAGTTCCTCCCTCTTGACGCCG
4345 APAI,
4382 TyrArgArgCysArgAlaSerGlyValLeuThrThrSerCysGlyAsnThrLeuThrCys
TATCGCAGGTGCCGCGCGAGCGGCGTACTGACAACTAGCTGTGGTAACACCCTCACTTGC
ATAGCGTCCACGGCGCGCTCGCCGCATGACTGTTGATCGACACCATTGTGGGAGTGAACG
4442 TyrIleLysAlaArgAlaAlaCysArgAlaAlaGlyLeuGlnAspCysThrMetLeuVal
TACATCAAGGCCCGGGCAGCCTGTGAGCCGCGAGGGCTCCAGGACTGCACCATGCTCGTG
ATGTAGTTCGGGGCCGTCGGACAGCTCGGCGTCCCGAGGTCCTGACGTGGTACGAGCAC
4452 SMAI XMAI,
4502 CysGlyAspAspLeuValValIleCysGluSerAlaGlyValGlnGluAspAlaAlaSer
TGTGGCGACGACTTAGTCGTTATCTGTGAAAGCGCGGGGTCCAGGAGGACGCGGCGAGC
ACACCGCTGCTGAATCAGCAATAGACACTTTCGCGCCCCCAGGTCTCTCGCGCGCTCG
4508 DRD1, 4511 TTH31,
4562 LeuArgAlaPheThrGluAlaMetThrArgTyrSerAlaProProGlyAspProProGln
CTGAGAGCCTTCACGGAGGCTATGACCAGGTACTCCGCCCCCTGGGGACCCCCACAA
GACTCTCGGAAGTGCCTCCGATACTGGTCCATGAGGCGGGGGGACCCCTGGGGGGTGT
4622 ProGluTyrAspLeuGluLeuIleThrSerCysSerSerAsnValSerValAlaHisAsp
CCAGAATACGACTTGGAGCTCATAACATCATGCTCCTCCAACGTGTAGTCGCCCCAGAC
GGTCTTATGCTGAACCTCGAGTATTGTAGTACGAGGAGGTTGCACAGTCAGCGGGTGTG
4637 SACI,
4682 GlyAlaGlyLysArgValTyrTyrLeuThrArgAspProThrThrProLeuAlaArgAla
GGCGCTGGAAAGAGGGTCTACTACCTCACCCGTGACCCTACAACCCCTCGCGAGAGCT
CCGCGACCTTTCTCCAGATGATGGAGTGGGCACTGGGATGTTGGGGGAGCGCTCTCGA
4731 NRUI,
4742 AlaTrpGluThrAlaArgHisThrProValAsnSerTrpLeuGlyAsnIleIleMetPhe
GCGTGGGAGACAGCAAGACACACTCCAGTCAATTCCTGGCTAGGCAACATAATCATGTTT
CGCACCTCTGTCGTTCTGTGTGAGGTGAGTTAAGGACCGATCCGTTGTATTAGTACAAA
4802 AlaProThrLeuTrpAlaArgMetIleLeuMetThrHisPhePheSerValLeuIleAla
GCCCCACACTGTGGGCGAGGATGATACTGATGACCCATTCTTTAGCGTCTTATAGCC
CGGGGTGTGACACCCGCTCCTACTATGACTACTGGGTAAGAAATCGCAGGAATATCGG
4806 PFLM1, 4807 DRA3,
ArgAspGlnLeuGluGlnAlaLeuAspCysGluIleTyrGlyAlaCysTyrSerIleGlu

FIG. 21H

4862 AGGGACCAGCTTGAACAGGCCCTCGATTGCGAGATCTACGGGGCCTGCTACTCCATAGAA
TCCCTGGTCGAACTTGTCCGGGAGCTAACGCTCTAGATGCCCCGGACGATGAGGTATCTT
4893 BGL2,
ProLeuAspLeuProProIleIleGlnArgLeuHisGlyLeuSerAlaPheSerLeuHis
4922 CCACTGGATCTACCTCCAATCATTCAAGACTCCATGGCCTCAGCGCATTTTCACTCCAC
GGTGACCTAGATGGAGGTTAGTAAGTTTCTGAGGTACCGGAGTCGCGTAAAAGTGAGGTG
4954 NCOI,
SerTyrSerProGlyGluIleAsnArgValAlaAlaCysLeuArgLysLeuGlyValPro
4982 AGTTACTCTCCAGGTGAAATCAATAGGGTGGCCGCATGCCTCAGAAAAGTTGGGGTACCG
TCAATGAGAGGTCCACTTTAGTTATCCACCGGCGTACGGAGTCTTTGAACCCCATGGC
5015 SPHI, 5035 KPNI,
ProLeuArgAlaTrpArgHisArgAlaArgSerValArgAlaArgLeuLeuAlaArgGly
5042 CCCTTGGGAGCTTGGAGACACCGGGCCCGGAGCGTCCGCGCTAGGCTTCTGGCCAGAGGA
GGGAACGCTCGAACCTCTGTGGCCCGGGCCTCGCAGGCGCGATCCGAAGACCGGTCTCTCT
5064 APAI, 5091 BALI,
GlyArgAlaAlaIleCysGlyLysTyrLeuPheAsnTrpAlaValArgThrLysLeuLys
5102 GGCAGGGCTGCCATATGTGGCAAGTACCTCTTCAACTGGGCAGTAAGAACAAGCTCAAA
CCGTCCCAGCGGTATACACCGTTCATGGAGAAGTTGACCGTCATTCTTGTTCGAGTTT
5113 NDEI,
LeuThrProIleAlaAlaAlaGlyGlnLeuAspLeuSerGlyTrpPheThrAlaGlyTyr
5162 CCACTCCAATAGCGGCGCTGGCCAGCTGGACTTGTCCGGCTGGTTCACGGCTGGCTAC
GAGTGAGGTTATCGCCGGCGACCGGTTCGACCTGAACAGGCCGACCAAGTGCCGACCGATG
5174 NOTI, 5175 EAGI XMA3, 5182 BALI, 5186 PVU2,
SerGlyGlyAspIleTyrHisSerValSerHisAlaArgProArgTrpIleTrpPheCys
5222 AGCGGGGAGACATTTATCACAGCGTGTCTCATGCCGGGCCCGCTGGATCTGGTTTTGC
TCGCCCCCTCTGTAAATAGTGTGCGACAGAGTACGGGGCGGGGCGACCTAGACCAAAACG
5240 DRA3,
LeuLeuLeuLeuAlaAlaGlyValGlyIleTyrLeuLeuProAsnArgMetSerThrAsn
5282 CTACTCCTGCTTGCTGCAGGGGTAGGCATCTACCTCCTCCCCAACCGAATGAGCACGAAT
GATGAGGACGAACGACGTCCCATCCGTAGATGGAGGAGGGGTTGGCTTACTCGTGCTTA
5295 PSTI,
ProLysProGlnArgLysThrLysArgAsnThrAsnArgArgProGlnAspValLysPhe
5342 CCTAAACCTCAAAGAAAGACCAAACGTAACACCAACCGGCGGCCGAGGACGTCAAGTTC
GGATTTGGAGTTTCTTTCTGGTTTGATTGTGGTTGGCCGCCGCGTCTGCAGTTCAAG
5380 NOTI, 5381 EAGI XMA3, 5390 AAT2, 5401 SMAI XMAI,
ProGlyGlyGlyGlnIleValGlyGlyValTyrLeuLeuProArgArgGlyProArgLeu
5402 CCGGGTGGCGGTGAGATCGTTGGTGGAGTTTACTTGTGGCGCGCAGGGCCCTAGATTG
GGCCACCGCCAGTCTAGCAACCACTCAAATGAACAACGGCGCGTCCCCGGGATCTAAC

FIG. 21I

2342 LysGlyValTrpArgGlyAspGlyIleMetHisThrArgCysHisCysGlyAlaGluIle
AAGGGGGTCTGGCGAGGGGACGGCATCATGCACACTCGCTGCCACTGTGGAGCTGAGATC
TTCCCCAGACCGCTCCCCTGCCGTAGTACGTGTGAGCGACGGTGACACCTCGACTCTAG

2402 ThrGlyHisValLysAsnGlyThrMetArgIleValGlyProArgThrCysArgAsnMet
ACTGGACATGTCAAAAACGGGACGATGAGGATCGTCGGTCCTAGGACCTGCAGGAACATG
TGACCTGTACAGTTTTTGCCTGCTACTCCTAGCAGCCAGGATCCTGGACGCTCCTTGAC
2425 BSAB1, 2441 AVR2, 2448 SSE83871, 2449 PSTI,

2462 TrpSerGlyThrPheProIleAsnAlaTyrThrThrGlyProCysThrProLeuProAla
TGGAGTGGGACCTTCCCCATTATGCCTACACCACGGGCCCCCTGTACCCCCCTTCCTGCC
ACCTCACCTGGAAGGGGTAAATTACGGATGTGGTGGCCGGGGACATGGGGGGAAGGACGC
2480 ASE1, 2497 APAI,

2522 ProAsnTyrThrPheAlaLeuTrpArgValSerAlaGluGluTyrValGluIleArgGln
CCGAACACACGTTCCGCTATGGAGGGTGTCTGCAGAGGAATACGTGGAGATAAGGCAG
GGCTTGATGTGCAAGCGCGATACCTCCACAGACGTCTCCTTATGCACCTCTATTCCGTC
2553 PSTI,

2582 ValGlyAspPheHisTyrValThrGlyMetThrThrAspAsnLeuLysCysProCysGln
GTGGGGGACTTCCACTACGTGACGGGTATGACTACTGACAATCTTAAATGCCCGTGCCAG
CACCCCTGAAGGTGATGCACTGCCCATACTGATGACTGTTAGAATTTACGGGCACGGTC
2594 DRA3,

2642 ValProSerProGluPhePheThrGluLeuAspGlyValArgLeuHisArgPheAlaPro
GTCCCATCGCCCGAATTTTTCACAGAATTGGACGGGGTGCGCCTACATAGGTTTGCGCCC
CAGGGTAGCGGGCTTAAAAAGTGTCTTAACCTGCCCCACGCGGATGTATCCAAACGCGGG

2702 ProCysLysProLeuLeuArgGluGluValSerPheArgValGlyLeuHisGluTyrPro
CCCTGCAAGCCCTTGCTGCGGGAGGAGGTATCATTAGAGTAGGACTCCACGAATACCCG
GGGACGTTCCGGGAACGACGCCCTCCTCCATAGTAAGTCTCATCTGAGGTGCTTATGGGC
2757 HGIE2,

2762 ValGlySerGlnLeuProCysGluProGluProAspValAlaValLeuThrSerMetLeu
GTAGGGTCGCAATTACCTTGCGAGCCCGAACCGGACGTGGCCGTGTTGACGTCCATGCTC
CATCCAGCGTTAATGGAACGCTCGGGCTTGGCCTGCACCGGCACAACCTGCAGGTACGAG
2809 AAT2,

2822 ThrAspProSerHisIleThrAlaGluAlaAlaGlyArgArgLeuAlaArgGlySerPro
ACTGATCCCTCCCATATAACAGCAGAGGCGGCGGCGAAGGTTGGCGAGGGGATCACCC
TGACTAGGGAGGGTATATTGTCGTCTCCGCCGGCCCGCTTCCAACCGCTCCCCTAGTGGG
2850 EAG1 XMA3,

2882 ProSerValAlaSerSerSerAlaSerGlnLeuSerAlaProSerLeuLysAlaThrCys
CCCTCTGTGGCCAGCTCCTCGGCTAGCCAGCTATCCGCTCCATCTCTCAAGGCAACTTGC
GGGAGACACCGGTCGAGGAGCCGATCGGTCGATAGGCGAGGTAGAGAGTTCCGTTGAACG
2889 BALI, 2903 NHEI,

FIG. 22E